

1. A method of operating a communication system to bill a call transmitted over a packet system wherein the communication system is comprised of a communication device, a signaling processor, a packet billing system, a public switched telephone network billing system, and the packet system, and wherein the communication device is configured to  
 5 communicate the call over the packet network, the method comprising:

in the packet billing system:

detecting a call setup message in first signaling transmitted between the signaling processor and the communication device, and generating a start record responsive to detecting the call setup message,

10 detecting a call complete message in second signaling transmitted between the signaling processor and the communication device, and generating an end record responsive to detecting the call complete message, and

transferring the start record and the end record; and

in the public switched telephone network billing system, receiving the start record  
 15 and the end record and processing the start record and the end record to generate a bill.

2. The method of claim 1 further comprising:

in the packet billing system, generating a first call detail record for the call transmitted over the packet system based on the start record and the end record, and

20 transferring the first call detail record; and

in the public switched telephone network billing system, receiving the first call detail record and processing the first call detail record to generate the bill.

3. The method of claim 2 wherein generating the first call detail record comprises:

25 reading a calling party identification, a called party identification, and first time of day information from the call setup message and entering the calling party identification, the called party identification, and the first time of day information into the first call detail record; and

30 reading the calling party identification, the called party identification, and second time of day information from the call complete message and entering the second time of day information into the first call detail record.

4. The method of claim 3 wherein generating the first call detail record further comprises:

determining a length of time for the call transmitted over the packet system based on the first time of day information and the second time of day information; and entering the length of time into the first call detail record.

5. The method of claim 2 further comprising:

in the public switched telephone network billing system, receiving a second call detail record generated by a Public Switched Telephone Network (PSTN)-based system for a call transmitted over a PSTN, and processing the second call detail record to generate the bill;

wherein the first call detail record generated by the packet billing system emulates the second call detail record generated by the PSTN-based system.

6. The method of claim 1 wherein the communication device comprises a switch.

7. The method of claim 1 wherein the communication device comprises a router.

8. The method of claim 1 wherein generating the start record comprises copying the call setup message.

9. The method of claim 1 wherein generating the start record comprises:

reading a calling party identification from the call setup message and inserting the calling party identification into the start record;

reading a called party identification from the call setup message and inserting the called party identification into the start record; and

determining time of day information and inserting the time of day information into the start record.

10. The method of claim 1 wherein generating the end record comprises copying the call complete message.

11. The method of claim 1 wherein generating the end record comprises:

- 5           reading a calling party identification from the call complete message and inserting the calling party identification into the end record;
- reading a called party identification from the call complete message and inserting the called party identification into the end record; and
- determining time of day information and inserting the time of day information
- 10   into the end record.

12. A communication system configured to generate a bill for a call transmitted over a packet system, comprising:

- a signaling processor;
- 15         a communication device configured to communicate with the signaling processor and communicate the call over the packet system;
- a packet billing system configured to detect a call setup message in first signaling transmitted between the signaling processor and the communication device, generate a start record responsive to detecting the call setup message, detect a call complete message
- 20   in second signaling transmitted between the signaling processor and the communication device, generate an end record responsive to detecting the call complete message, and transfer the start record and the end record; and
- a public switched telephone network billing system configured to receive the start record and the end record, and process the start record and the end record to generate a
- 25   bill.

13. The communication system of claim 12 wherein:

the packet billing system is further configured to generate a first call detail record for the call transmitted over the packet system based on the start record and the end record, and transfer the first call detail record; and

5 the public switched telephone network billing system is further configured to receive the first call detail record and process the first call detail record to generate the bill.

10 14. The communication system of claim 13 wherein the packet billing system is further configured to:

read a calling party identification, a called party identification, and first time of day information from the call setup message and enter the calling party identification, the called party identification, and the first time of day information into the first call detail record; and

15 read the calling party identification, the called party identification, and second time of day information from the call complete message and enter the second time of day information into the first call detail record.

20 15. The communication system of claim 14 wherein the packet billing system is further configured to determine a length of time for the call transmitted over the packet system based on the first time of day information and the second time of day information, and enter the length of time into the first call detail record.

16. The communication system of claim 13 wherein:

25 the public switched telephone network billing system is further configured to receive a second call detail record generated by a Public Switched Telephone Network (PSTN)-based system for a call transmitted over a PSTN, and process the second call detail record to generate the bill;

30 wherein the first call detail record generated by the packet billing system emulates the second call detail record generated by the PSTN-based system.

17. The communication system of claim 12 wherein the communication device comprises a switch.

18. The communication system of claim 12 wherein the communication device  
5 comprises a router.

19. The communication system of claim 12 wherein the communication device is configured to copy the call setup message to generate the start record.

10 20. The communication system of claim 12 wherein the communication device is configured to:

read a calling party identification from the call setup message and insert the calling party identification into the start record;

15 read a called party identification from the call setup message and insert the called party identification into the start record; and

determine time of day information and insert the time of day information into the start record.

20 21. The communication system of claim 12 wherein the communication device is configured to copy the call complete message to generate the end record.

22. The communication system of claim 12 wherein the communication device is configured to:

25 read a calling party identification from the call complete message and insert the calling party identification into the end record;

read a called party identification from the call complete message and insert the called party identification into the end record; and

determine time of day information and insert the time of day information into the end record.

30

23. A software product for operating a communication system to bill a call transmitted over a packet system, wherein the communication system is comprised of a communication device, a signaling processor, a packet billing system, a public switched telephone network billing system, and the packet system, and wherein the communication

5 device is configured to communicate the call over the packet network, comprising:

packet billing system software operational when executed by a processor to direct the processor to detect a call setup message in first signaling transmitted between the communication device and the signaling processor, generate a start record responsive to detecting the call setup message, detect a call complete message in second signaling

10 transmitted between the communication device and the signaling processor, generate an end record responsive to detecting the call complete message, and transfer the start record and the end record to the public switched telephone network billing system to generate a bill; and

a software storage medium configured to store the packet billing system software.

15

24. The software product of claim 23 wherein the packet billing software is further operational to direct the processor to:

generate a call detail record for the call transmitted over the packet system based on the start record and the end record, and transfer the call detail record to the public

20 switched telephone network billing system.

25. The software product of claim 23 wherein the packet billing software is further operational to direct the processor to:

25 read a calling party identification, a called party identification, and first time of day information from the call setup message and enter the calling party identification, the called party identification, and the first time of day information into the call detail record; and

read the calling party identification, the called party identification, and second time of day information from the call complete message and enter the second time of day information into the call detail record.

30

26. The software product of claim 25 wherein the packet billing software is further operational to direct the processor to:

determine a length of time for the call transmitted over the packet system based on the first time of day information and the second time of day information; and

5 enter the length of time into the call detail record.

27. The software product of claim 23 wherein the packet billing software is further operational to direct the processor to copy the call setup message to generate the start record.

10

28. The software product of claim 23 wherein the packet billing software is further operational to direct the processor to:

read a calling party identification from the call setup message and insert the calling party identification into the start record;

15 read a called party identification from the call setup message and insert the called party identification into the start record; and

determine time of day information and insert the time of day information into the start record.

20 29. The software product of claim 23 wherein the packet billing software is further operational to direct the processor to copy the call complete message to generate the end record.

30. The software product of claim 23 wherein the packet billing software is further

25 operational to direct the processor to:

read a calling party identification from the call complete message and insert the calling party identification into the end record;

read a called party identification from the call complete message and insert the called party identification into the end record; and

30 determine time of day information and insert the time of day information into the end record.